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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,715	03/30/2001	Jason Ross	42390P10576	7276

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EXAMINER

ALCALA, JOSE H

ART UNIT PAPER NUMBER

2827

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,715

Applicant(s)

ROSS ET AL.

Examiner

Jose H Alcalá

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-40 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "driver", the "driver end", the "receiver", "receiver end" and the "signal carrying module" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP

§ 2172.01. The omitted structural cooperative relationships are: how one plane is related to the other, and how are the planes separated, there needs to be a material (structural element) between the planes in order to support the via through hole.

Claims 3,10 and 17 are not clear regarding if the first receiver and the first driver are part of the first plate or if they are separate elements in the device. For examination purposes it is seen as a label for sections of the through hole.

Claims 6, 13 and 20 are not clear regarding how can the whole first plane be a ground or a power plane. Is it the “**first plate**”, the one that is a ground or a power plane?

Claim 8 is unclear and structurally incomplete, since there needs to be a material (structural element) between the planes in order to support the via through hole.

Claim 15 is unclear and structurally incomplete, since there needs to be a material (structural element) between the planes in order to support the via through hole. In addition in line 3, it is not clear if the first receiver and the first driver are part of the first plate or the through hole component, or if they are separate elements in the device. Furthermore, in lines 3 and 4, it is unclear what “the carrying module” means, is it a signal path or a different element of the device. In lines 6 and 8, it is not clear if the “plated hole” is the same thing as the “through hole” of line 1 or if it is a different through hole.

Claim 34 is unclear regarding how can the first layer of the printed circuit board and the second layer of the printed circuit board be adjacent layers, and still have a capacitance with plates located on these layers.

Claim 35 is not clear regarding if the first and second receivers are part of the first and second plates or if they are separate elements in the device. For examination purposes they are seen as mere labels for the intended use of sections of the through hole.

Claim 36 is not clear regarding if the first and second drivers are part of the first and second plates or if they are separate elements in the device. For examination purposes they are seen as mere labels for the intended use of sections of the through hole.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-22,24,26,28-30, 34-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Bohbot et al. (US Patent No. 5,326,284). As best understood by the examiner:

Regarding Claims 1 and 8, Bohbot teaches an apparatus comprising: a first signal path (Reference number 68) connected to a first plane (Plane of figure 5a) via a plated hole (Reference number R1), the first signal path on a second plane (Plane of figure 5b); a first metal flood (Reference number 60 in Figure 5a) connected to the plated hole (Reference number R1) to form a first plate, the first metal flood on the first

plane; a second signal path (Reference number 74) on the second plane; and a second metal flood (Reference number 60 in Figure 5b) connected to the second signal path to form a second plate above the first plate, the second plate on the second plane.

Regarding Claims 2 and 9, Bohbot teaches that the first and second plates form a capacitance (column 5, lines 2 and 3).

Regarding Claims 3 and 10, Bohbot teaches that the first plate is connected at one of a first receiver end and a first driver end of the first signal path (See Figure 5a).

Regarding Claims 4 and 11, Bohbot teaches that the second plate is connected at one of a second receiver end and a second driver end of the second signal path (See Figure 5a).

Regarding Claims 5 and 12, Bohbot teaches that the first and second signal paths are adjacent to each other (See figure 5b).

Regarding Claims 6 and 13, the limitation that the first plane is one of a ground plane and a power plane, is an intended use limitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Regarding Claims 7 and 14, Bohbot teaches that the first metal flood is an isolated area in the first plane (See Figure 5a).

Regarding Claim 15, Bohbot teaches a system comprising: a through hole component (Reference number R1), the through hole component having one of a first receiver end and a first driver end (See figures 5a and 5b); a signal carrying module

coupled to the through hole component to carry signal, the signal carrying module comprising: a first signal path (Reference number 68) connected to a first plane (Figure 5a) via a plated hole (Reference number R1), the first signal path on a second plane (Figure 5b); a first metal flood (Reference number 60 in Figure 5a) connected to the plated hole to form a first plate, the first metal flood on the first plane; a second signal path (Reference number 74) on the second plane; and a second metal flood (Reference number 60 in Figure 5b) connected to the second signal path to form a second plate above the first plate, the second plate on the second plane.

The limitation: "to hold a component that is mounted on a board", is an intended use limitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Regarding Claim 16, Bohbot teaches that the first and second plates form a capacitance (column 5, lines 2 and 3).

Regarding Claim 17, Bohbot teaches that the first plate is connected at one of a first receiver end and a first driver end of the first signal path (See Figure 5a).

Regarding Claim 18, Bohbot teaches that the second plate is connected at one of a second receiver end and a second driver end of the second signal path (See Figure 5a).

Regarding Claim 19, Bohbot teaches that the first and second signal paths are adjacent to each other (See figure 5b).

Regarding Claim 20, the limitation that the first plane is one of a ground plane and a power plane, is an intended use limitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Regarding Claim 21, Bohbot teaches that the first metal flood is an isolated area in the first plane (See Figure 5a).

Regarding Claims 22,24 and 26, it is inherent from the Bohbot reference that the layer (Reference number 52) between the first plate and the second plate is a dielectric.

Regarding Claim 28, Bohbot teaches an apparatus comprising: a printed circuit board (Reference number 52); a first transmission line (Reference number 68) on a first layer of the printed circuit board; a second transmission line (Reference number 74) on the first layer of the printed circuit board; and a capacitor (Reference number 60) connected to the first transmission line and the second transmission line, the capacitor comprising: a first plate (Reference number 60 in Figure 5a) connected to the first transmission line by a plated hole (Reference number R1), the first plate on a second layer (Plane of figure 5a) of the printed circuit board; a second plate (Reference number 60 in Figure 5b) connected to the second transmission line, the second plate on the first layer (Plane of figure 5b) of the printed circuit board; and a dielectric layer (Board with Reference number 52) between the first plate and the second plate, the dielectric layer between the first layer of the printed circuit board and the second layer of the printed circuit board.

Regarding Claims 29 and 30, Bohbot teaches that the first plate can be above the second plate, and that the second plate can be above the first plate.

Regarding Claim 34, Bohbot teaches that the first layer of the printed circuit board and the second layer of the printed circuit board are adjacent layers (See figures 5a and 5b of Bohbot) where they are adjacent layers.

Regarding Claim 35, Bohbot teaches that the the first plate is connected at a first receiver end of the first transmission line and the second plate is connected a second receiver end of the second transmission line. (See Figures 5a and 5b).

Regarding Claim 35, Bohbot teaches that the the first plate is connected at a first driver end of the first transmission line and the second plate is connected a second driver end of the second transmission line. (See Figures 5a and 5b).

Regarding Claim 37, Bohbot teaches that the first transmission line is adjacent to the second transmission line (See Figure 5b)

Regarding Claim 38, Bohbot inherently teaches that the first transmission line is inductively coupled to the second transmission line.

Regarding Claim 39, Bohbot inherently teaches that the first transmission line and/or second transmission line are routed as microstrips, since that is merely a label for the arrangement.

Regarding Claim 40, Bohbot teaches that the first transmission line and the second transmission line are routed on surface layers (See Figures 5a and 5b).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 23,25 and 27, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohbot et al. (US Patent No. 5,326,284) in view of Wang et al. (US Patent No. 5,475,262). As best understood by the examiner:

Regarding Claims 23,25,27 and 31, Bohbot teaches all the elements of the instant claimed invention as stated supra for claims 2,9,16 and 28, but fails to explicitly teach that the capacitance is a buried intersignal capacitance. Wang et al. teaches a circuit board where the capacitance is a buried intersignal capacitance (See Reference numbers 202,201 and 104)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bohbot and Wang, in order to add more dielectric and conducting layers to the apparatus taught by Bohbot, thus improving rigidity of the board, allowing more elements to be connected to the apparatus and making the apparatus easy to repair.

Regarding Claim 32, Bohbot teaches in Column 5, lines 19-24 that the buried intersignal capacitor mode compensates to improve signal quality in the printed circuit board.

Regarding Claim 33, the limitation that "the buried intersignal capacitor matches the propagation speed of odd-mode switch signals with the propagation speed of even-mode switch signals" is an intended use limitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach some of the elements of the instant claimed invention: Nosaka (US Patent No. 6,115,264), Ferry (US Patent No. 6,096,980), Noe et al. (US Patent No. 5,657,208), Howard et al. (US Patent No. 5,466,892), Figueroa et al. (US Patent No. 6,388,207) and Hale et al. (US Patent No. 6,407,929).

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

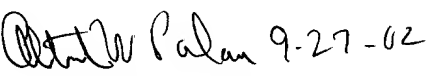
11. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose H Alcala whose telephone number is (703) 305-9844. The examiner can normally be reached on Monday to Friday.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA
September 27, 2002


ALBERT W. PALADINI
PRIMARY EXAMINER